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STUDIES OF NEOTROPICAL CADDIS FLIES, II

PES OF SOME SPECIES DESCRIBED BY ULMER AND BRAUER

By OLIVER S. FLINT, JR.

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STUDIES OF NEOTROPICAL CADDIS FLIES, III

TYPES OF SOME SPECIES DESCRIBED BY ULMER AND BRAUER

By OLIVER S. FLINT, JR.
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Georg Ulmer described 67 species of Trichoptera from South and Central America and the West Indies during the years 1905 to 1913. His work, which established a basis for subsequent studies on this fauna, was excellent by standards of his day. By present-day standards, however, most of his illustrations of the genitalia are inadequate because he did not clear these important structures before figuring them.

Friedrich Brauer described only two species of caddis flies from this region—one from Mexico, the other from Brazil. The latter species, the type of which has been redescribed, presents no particular problems. The former, for which he proposed a new genus, has been neither redescribed nor rediscovered subsequently.

During the past few years I have been able to borrow the types of nearly half of Ulmer's species and of both of Brauer's species. Many of these species were described from series, which in a few

cases appear to be mixed. To avoid any future ambiguity, lectotypes are here designated for all species described from a series. The genitalia of the borrowed holotypes or lectotypes have been cleared and figures prepared from these preparations for species that have not been redescribed recently. In addition, photographs have been made of the wings of species in certain genera. The final drawings were prepared by Mr. André D. Pizzini from sketches made by the author.

The work was made possible through the excellent cooperation of Dr. Cezary Tomaszewski, Zoological Museum of the University of Lodz, Lodz, Poland, who arranged for the loan of the types in the collection of the Institute of Zoology of the Polish Academy of Science in Warsaw and to Prof. Dr. Max Beier, Zoological Division of the Natural History Museum in Vienna, who lent the types in the collection of that museum.

Rhyacophilidae

Atopsyche longipennis (Ulmer)

Psilochorema longipenne Ulmer, 1905a, pp. 110–112.—Tomaszewski, 1961, p. 4.
Atopsyche longipennis (Ulmer).—Ulmer, 1907b, p. 205; 1913, p. 384.—Ross, 1947, p. 128.—Ross and King, 1952, p. 202.—Fischer, 1960, p. 161.
Atopsyche brasiliana Ulmer, 1909a, p. 73. [Lapsus for *longipennis*.]

The collection from Warsaw contains two female syntypes. Apparently, Dr. Ulmer had retained a male syntype which should be designated lectotype.

I have seen a series of males and females of the species from Nova Teutonia, Santa Catarina, Brazil. The genitalia of the female from this series are identical with those of the female syntypes. The males from the series are identical with the male type figured by Ross and King, giving additional evidence that the species is being correctly recognized.

Glossosomatidae

Mexitrichia albolineata (Ulmer), new combination

FIGURE 1*d*

Mortoniella species Ulmer, 1906, pp. 98, 99.
Mortoniella albolineata Ulmer, 1907a, pp. 44, 45; 1907b, p. 219; 1913, p. 385.—Jorgensen, 1919, p. 394.—Tomaszewski, 1961, p. 4.—Fischer, 1961, p. 83.
?*Antoptila albolineata* (Ulmer).—Mosely, 1939a, p. 218.
Mexitrichia teutonia Mosely, 1939a, p. 223.—Flint, 1963, pp. 474, 475. [New synonymy.]

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1751," "Mortoniella albolineata Ulmer Typus!" "Lectotype Mortoniella albolineata Ulmer By Flint." In Warsaw.

Ulmer was mistaken in his belief that the original series was all female because there was one male in the series from Warsaw. This specimen has been designated lectotype.

Although there are several small differences between the lectotype and topotypic examples of *M. teutonia*, I am synomymizing the two species. The differences in *albolineata* are in the ventral lobe of the tenth tergum which is much narrower, the lateral processes of the aedeagus which are narrower, and the ventralmost spine which is stouter. All of these differences, however, are quantitative in nature and rather minor considering the overall similarity of the genitalia.

Philopotamidae

Chimarra mexicana (Ulmer)

Wormaldia mexicana Ulmer, 1905b, p. 89.
Chimarrha mexicana (Ulmer).—Ulmer 1907b, p. 200; 1913, p. 405.
Chimarra mexicana (Ulmer).—Fischer, 1961, p. 66.

Lectotype: "Bilimek Mexico 1871 Stadt," "pulchra? det. Brauer," "mexicana det. Ulmer," "Lectotype Wormaldia mexicana Ulmer Designated Flint." In Vienna.

This species, originally described in *Wormaldia*, is definitely a species of *Chimarra* (subgenus *Curgia*). Unfortunately the type series is in very poor condition since each specimen lacks its abdomen. The lectotype is in the best condition and is brown with yellow hair on the head and in patches on the forewings. The original figure of the venation appears correct, but the figure of the genitalia is undoubtedly upside down.

Chimarra brasiliana (Ulmer)

FIGURES 1*a–c*

Chimarrha brasiliana Ulmer, 1905a, pp. 96, 97; 1907b, p. 200; 1909b, p. 308; 1913, p. 405—Lestage, 1925, p. 38.—Tomaszewski, 1961, p. 2.
Wormaldia brasiliana (Ulmer).—Ulmer, 1905b, p. 91.
Chimarra brasiliana (Ulmer).—Fischer, 1961, p. 58.
Wormaldia parva Ulmer, 1905b, p. 90. [New synonymy.]
Chimarrha parva (Ulmer).—Ulmer, 1907b, p. 200; 1913, p. 405—Lestage, 1925, p. 39.
Chimarra parva (Ulmer).—Fischer, 1961, p. 68.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "St. Ztg. 1905, p. 97 N. 81," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1713," "Chimarrha brasiliana Ulm. Typus!" "Lectotype Chimarrha brasiliana Ulmer By Flint." In Warsaw.

Lectotype, male: "Blumenau," "Brasil 1885 Hetschko," "parva det. Ulmer," "Lectotype Wormaldia parva Ulmer Designated Flint." In Vienna.

The lectotypes of *brasiliana* and *parva* have been compared side by side and, with the exception of a few small quantitative differences, have been found identical. The figures here presented were made from the lectotype of *parva*.

Psychomyiidae

Polyplectropus annulicornis Ulmer

FIGURES 1*g,h*

Polyplectropus annulicornis Ulmer, 1905b, p. 91; 1907b, p. 185; 1913, p. 406.—Fischer, 1962, p. 92.

Lectotype, female: "Rio Gr. do Sul Stieglmayr," "annulicornis det. Ulmer," "Lectotype Polyplectropus annulicornis Ulmer Designated Flint." In Vienna.

The type series of the species consists only of females, one of which is here selected as lectotype and figured. In addition, a series of males and females, carefully compared with the lectotype, from Plaumann in Santa Catarina has been studied and the male genitalia of one figured.

Polyplectropus flavicornis Ulmer

FIGURES 1*e,f*

Polyplectropus flavicornis Ulmer, 1905a, pp. 103, 104; 1907b, p. 185; 1913, p. 406.—Tomaszewski, 1961, p. 4.—Fischer, 1962, pp. 92, 93.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "St. Zt. 1905, p. 104 N. 87," "Polyplectropus flavicornis Ulm. Type." "Lectotype Polyplectropus flavicornis Ulmer By Flint." In Warsaw.

The figure of the male genitalia was made from the lectotype and that of the female from one of the paralectotypes.

Xiphocentron bilimeki Brauer

FIGURES 1*i,j*

Xiphocentron bilimeki Brauer, 1870, p. 66; 1871, p. 103.—Ulmer, 1907b, p. 176; 1913, p. 407.—Ross, 1949, pp. 3, 4.—Fischer, 1963, p. 138.

Lectotype, male: "Bilimek Mexico 1871," "Bilimeki det. Brauer," "Bilimeki det. Ulmer," "Xiphocentron Bilimeki Brauer," "Lectotype Xiphocentron bilimeki Brauer Designated Flint." In Vienna.

The figures of the genitalia were made from the lectotype. This species has a very long, broad spur on the hind tibia as mentioned in the original description.

Hydropsychidae

Blepharopus diaphanus reticulatus Ulmer

FIGURES 2*e–g*; PLATE 2*c*

Blepharopus reticulatus Ulmer, 1905a, pp. 52, 53; 1907b, p. 162.—Tomaszewski, 1961, p. 2.

Ekpharopus diaphanus reticulatus Ulmer.—Ulmer 1907c, pp. 43, 44.—Navas, 1918, p. 503; 1920a, p. 40; 1926, p. 113; 1932, p. 83.—Fischer, 1963, pp. 164, 165.

The photograph of the wings and the drawings of the male genitalia were made from the holotype male in the collection from Warsaw.

Leptonema cinctum Ulmer

FIGURES 2*j–m*

Leptonema cinctum Ulmer, 1905a, pp. 64, 65; 1907b, p. 163; 1907c, p. 54; 1913, pp. 393, 407.—Mosely, 1933, pp. 19, 20.—Tomaszewski, 1961, p. 3.—Fischer, 1963, pp. 167–168.

The wings of the holotype male seem to have the same pattern as those of the specimen figured by Mosely (1933, frontisp.). The genitalia, however, show several distinct differences, especially in the structure of the tenth tergum. I have not seen enough material of the species to determine whether these differences are of specific value.

The drawings of the genitalia were made from the holotype male in the collection from Warsaw.

Leptonema columbianum Ulmer

Leptonema columbianum Ulmer, 1905a. pp. 61, 62; 1907b, p. 163; 1907c, p. 51; 1913, pp. 394, 407.—Banks, 1913a, p. 89.—Navas, 1917, p. 404; 1920a, p. 40; 1920b, p. 64; 1930, p. 132.—Mosely, 1933, pp. 13, 14.—Tomaszewski, 1961, p. 3.—Fischer, 1963, p. 168.

Leptonema externum Banks, 1913a, p. 87.—Mosely, 1933, pp. 8, 13 (synonymizes *externum*).

Lectotype, female: "Columbia Pehlke," "Type," "St. Z. 1905 p. 62 N. 43," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1735," "Leptonema columbianum Ulmer Typus!" "Lectotype Leptonema columbianum Ulmer By Flint." In Warsaw.

The type specimens are all females with dilated mesothoracic legs as stated by Ulmer. There is no reason to believe that Mosely associated the wrong male with the species. His action is substantiated by several series I have seen which contain both sexes.

Leptonema furcatum Ulmer

Leptonema furcatum Ulmer, 1905a, pp. 50, 51; 1907b, p. 161; 1907c, pp. 48, 49; 1913, p. 407.—Navas, 1916, p. 30.—Mosley, 1933, pp. 42, 43; 1939b, pp. 310–314 (as a synonym of *pallidum* Guer).—Tomaszewski 1961, p. 3.—Fischer, 1963, p. 169.

Lectotype, male: "Esprito-Santo Brasil ex Coll. Fruhstorfer," "Co-Typus," "St. Z. 1905 p. 58 N. 38," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 7736," "Leptonema furcatum Ulmer Typus!" "Lectotype Leptonema furcatum Ulmer By Flint." In Warsaw.

The lectotype of the species agrees closely with Mosely's figures and is therefore not refigured. Although Mosely's action (1939b)

synonymizing *furcatum* with *L. pallidum* Guerin may ultimately prove correct, I feel that his reasons of pale color and locality make this synonymy too tenuous to accept at this time.

Leptonema stigmosum Ulmer

FIGURES 2*n–q*

Leptonema stigmosum Ulmer, 1905a, p. 60; 1907b, p. 163; 1907c, pp. 57, 58; 1913, pp. 394, 407.—Campos, 1922, p. 74.—Mosely, 1933, p. 140.—Fischer, 1947, pp. 313, 315.—Tomaszewski, 1961, p. 3.—Fischer, 1963, p. 173.—Schmid, 1964, pp. 317, 318.

Lectotype, male: "Balzapamba (Ecuad.) R. Haensch S," "Type," "St. Z. 1905 p. 61. N. 41," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1736," "Leptonema stigmosum Ulmer Typus!" "Lectotype Leptonema stigmosum Ulmer By Flint." In Warsaw.

Mosely's illustrations (1933) do not agree very closely with the lectotype. The tenth tergum of the lectotype is not as extended, especially the dorsal lobe, and the apical processes of the aedeagus are different, although of the same general plan. It is not known whether these differences are specific, because considerable variation has been found whenever specimens from different localities identified as *stigmosum* have been looked at critically.

The figures of the genitalia were made from the lectotype.

Centromacronema excisum (Ulmer)

PLATE 1E

Macronema excisum Ulmer, 1905a, pp. 85, 86.—Tomaszewski, 1961, p. 4.
Centromacronema excisum (Ulmer).—Ulmer, 1905b, p. 87; 1907b, p. 116; 1907c, p. 117; 1913, p. 408.—Fischer, 1968, p. 204.

The holotype female is from Santa Inez, Ecuador, "R. Haensch S." The photograph of the wings was made from the type which is in the collection in Warsaw.

Macronema argentilineatum Ulmer

FIGURES 3*g–i*; PLATE 1D

Macronema argentilineatum Ulmer, 1905a, pp. 77, 78; 1907b, p. 164; 1907c, pp. 68, 69; 1913, p. 408.—Banks 1924, p. 453.—Tomaszewski, 1961, p. 4.—Fischer, 1963, p. 177.

The photograph of the wings and the drawings of the genitalia were prepared from the holotype male from Warsaw. The mesal rodlike process of the eighth sternum has not been found in any other Neotropical species of the genus.

Macronema bicolor Ulmer

FIGURES 3 *d–f*; PLATE 1C

Macronema bicolor Ulmer, 1905a, pp. 75, 76; 1907b, p. 164; 1907c, pp. 71, 72; 1913, pp. 395, 408.—Tomaszewski, 1961, p. 4.—Fischer, 1963, p. 178.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "St. Z.

1905 p. 76 N 56," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1743," "Macronema bicolor Ulmer Typus!" "Lectotype Macronema bicolor Ulmer By Flint." In Warsaw.

The photograph of the wings was made from the lectoparatype; the drawings of the genitalia were made from the lectotype. The two specimens are identical in all details.

Macronema parvum Ulmer

FIGURES 3 *a–c;* PLATE 1F

Macronema parvum Ulmer, 1905a, pp. 73, 74; 1907b, p. 165; 1907c, pp. 69, 70; 1913, p. 408.—Tomaszewski, 1961, p. 4.—Fischer, 1963, p. 193.

Lectotype, male: "Süd Amerika," "Type," "St. Z. 1905, p. 74. N 55," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1749," "Macronema parvum Ulmer Typus!" "Lectotype Macronema parvum Ulmer By Flint." In Warsaw.

The photograph of the wings and the drawings of the genitalia were made from the lectotype.

Macronema santaeritae Ulmer

PLATE 1B

Macronema Santae Ritae Ulmer, 1905b, p. 85; 1907b, p. 165; 1907c, pp. 79, 80; 1913, pp. 397, 408.—Jorgensen, 1919, p. 396.—Fischer, 1963, p. 196.

The unique type of the species in the Vienna Museum is a female, the wings of which are figured.

Macronema tuberosum Ulmer

FIGURES 3 *j,k;* PLATE 1A

Macronema tuberosum Ulmer, 1905b, p. 82; 1907b, p. 165; 1907c, pp. 78, 79; 1913, p. 408.—Fischer, 1963, p. 199.

Lectotype, male: "Bahia Brasilia Fruhstorfer," "tuberosum det. Ulmer," "Lectotype Macronema tuberosum Ulmer Designated Flint." In Vienna.

The accompanying figures of the wings and male genitalia were prepared from the lectotype.

Rhyacophylax columbianus Ulmer

FIGURES 2*c,d*

Rhyacophylax columbianus Ulmer, 1905a, pp. 106, 107; 1907b, p. 175; 1909b, p. 306; 1913, pp. 390, 391, 407.—Jorgensen, 1919, p. 395.—Tomaszewski, 1961, p. 4.—Fischer, 1963, p. 136.

Lectotype, male: "Columbia Pehlke," "Type," "Type 11795," "Rhyacophylax columbianus Ulm.," "Lectotype Rhyacophylax columbianus Ulm, By Flint '64." In the collection of the Museum of Comparative Zoology, Cambridge, Mass.

Although there is a male in the series from Warsaw, it appears to be a different species from that figured by Ulmer (1913). For this reason

I am designating as lectotype a syntypic male in the collection of the Museum of Comparative Zoology which agrees with Ulmer's figures.

The figures of the species were prepared from the lectotype.

Rhyacophylax brasilianus Ulmer

FIGURES 2*a*,*b*

Rhyacophylax brasilianus Ulmer, 1905a, p. 108; 1907b, p. 176; 1913, pp. 391, 392, 407.—Banks, 1913a, p. 88.—Tomaszewski, 1961, p. 4.—Fischer, 1963, pp. 135, 136.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "St. zg. 1905, p. 108, N. 91," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1758," "Rhyacophylax brasilianus Ulm. Typus!" "Lectotype Rhyacophylax brasilianus Ulmer By Flint." In Warsaw.

The eye of the male of this species is about one-half as wide as the distance between the eyes. The forewings, which are badly damaged, appear to be pale on their basal half, dark especially toward the costal margin, a narrow pale band at the cord, followed by a dark apex. The male genitalia are also damaged; the tip of the aedeagus is lacking. The figures of the male were made from the lectotype.

Synoestropsis obliqua Ulmer

FIGURE 2*h*; PLATE 2A

Synoestropsis obliqua Ulmer, 1905a, pp. 45–47; 1907b, p. 158; 1907c, pp. 28, 29; 1913, pp. 392, 407.—Tomaszewski, 1961, p. 5.—Fischer, 1963, p. 210.

Lectotype, male: "Rio Grande do Sul," "Type," "St. Z. 1905. p. 46 N. 27," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1760," "Synoestropsis obliqua Ulmer Typus!" "Lectotype Synoestropsis obliqua Ulmer By Flint." In Warsaw.

The drawings of the genitalia and the photograph of the wings were made from the lectotype.

Synoestropsis pedicillata Ulmer

FIGURE 2*i*, PLATE 2B

Synoestropsis pedicillata Ulmer, 1905a, pp. 43–45; 1907b, p. 158; 1907c, pp. 26, 27; 1913, pp. 392, 407.—Jorgensen, 1919, p. 396.—Tomaszewski, 1961, p. 5.—Fischer, 1963, p. 210.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1761," "Lectotype Synoestropsis pedicillata Ulmer By Flint." In Warsaw.

The photograph of the wings and the drawings of the genitalia were made from the lectotype. The type series varies somewhat in the extent of dark spots around the crossveins.

Leptoceridae

Leptocella flavofasciata Ulmer

FIGURES 4*c,d;* PLATE 2E

Leptocella flavofasciata Ulmer, 1907a, pp. 18–20; 1907b, p. 138; 1913, p. 410.—Tomaszewski, 1961, p. 3.—Fischer, 1966, pp. 55, 56.
Leptocella sparsa Banks, 1920, p. 353. [New synonymy.]

The holotype of the species is rather mutilated; both the hindwings and the abdomen are missing. However, the forewings still show enough of their color pattern to permit recognition of the species. The photograph of the forewing is made from the holotype which is in Warsaw. The figure of the male genitalia was prepared from a syntype of *sparsa* in the Museum of Comparative Zoology.

Leptocella mulleri Ulmer

FIGURES 4*a,b;* PLATE 2D

Leptocella mulleri Ulmer, 1905a, pp. 29, 30; 1907b, p. 138; 1913, p. 410.—Tomaszewski, 1961, p. 3.—Fischer, 1966, p. 58.

The species was described from a single male, which has now lost the wings on the right side. The forewing of the species is buff, with black spots on the veins. The figures of the wings and genitalia were made from the holotype which is in Warsaw.

Leptocella punctata Ulmer

FIGURE 4*e–g;* PLATE 2F

Leptocella punctata Ulmer, 1905b, p. 75; 1907b, p. 138; 1913, pp. 402, 410.—Fischer, 1966, p. 60.
Leptocella fenestra Banks, 1913 b, p. 237. [New synonymy.]
Leptocella mixta Navas 1920b, p. 67; 1923, p. 200; 1929, p. 225.—Schmid, 1949, pp. 386, 387. [New synonymy.]
Leptocella ambitiosa Navas, 1933, p. 118.—Schmid, 1949, p. 386. [New synonymy.]

Lectotype, male: "Rio Preto, zw. Boquero u. Sta. Rita. Bras. Exped. Penther '03," "23.4," "punctata det. Ulmer," "Lectotype Leptocella punctata Ulmer By Flint." In Vienna.

The two type specimens of *punctata* are rather rubbed, but enough of the pattern remains to help with the recognition of the species. The wings are covered with white scales and marked with irregular yellowish to brownish patches frequently outlined in dark brown. The figures of the genitalia and photograph of the wings were made from the lectotype.

The types of *punctata* and *fenestra* have been compared side by side and found to be similar in all essential respects. Schmid (1949) synonymized *ambitiosa* with *mixta* and provided figures which enable me to synonymize them with *punctata*.

***Atanatolica brasiliana* (Brauer)**

Mystacides brasilianus Brauer, 1865, p. 256; 1866, p. 14.
Notanatolica brasiliana (Brauer).—Ulmer, 1905b, p. 72; 1906, pp. 31–34; 1907b, p. 131; 1913, pp. 402, 409.
Atanatolica brasiliana (Brauer).—Mosely, 1936, p. 123.—Fischer, 1965, p. 71.

Lectotype, male: "Novara-R. Rio de Janeiro," "Novara 1857–59 Reise," "brasiliana det Brauer," "brasiliana det. Ulmer," "Atanatolica brasiliana Brauer ♂ Novara Reise Rio Janeiro 1857–59 Type M.E.M.," "Lectotype Mystacides brasilianus Brauer By Flint." In Vienna.

The type is mounted on two slides, one pair of wings dry on one slide, the other pair of wings, one set of legs, head, and adbomen in Canada balsam on the other. The species was well figured by Mosely (1936) and therefore is not figured here.

Genus *Oecetis* McLachlan

Oecetis McLachlan, 1877, p. 329. [Type species: *Leptocerus ochraceus* Curtis, designated Ross 1944.]
Pseudosetodes Ulmer 1905b, p. 76. [New synonymy. Type species: *Pseudosetodes punctipennis* Ulmer, monobasic.]

Ulmer separated his genus *Pseudosetodes* from *Oecetis* primarily on the reduced number of veins in the hindwings. This characteristic does vary considerably in the genus *Oecetis*, and *punctipennis* can be considered to represent the most reduced condition yet found. Males of this species now have been found so that additional evidence from the genitalia may be considered. This structure in both sexes also conforms closely to the pattern found in *Oecetis*. I am therefore synonymizing *Pseudosetodes* with *Oecetis*.

***Oecetis punctipennis* (Ulmer), new combination**

FIGURES 4 *h,i*

Pseudosetodes punctipennis Ulmer, 1905b, p. 77; 1907b, p. 147; 1913, p. 410.—Fischer, 1966, p. 104.
Oecetina parishi Banks 1915, p. 631. [New synonymy.]

Lectotype, female: "Sta. Rita," "1.5," "Bras. Exped, Penther '03," "punctipennis det. Ulmer," "Lectotype Pseudosetodes punctipennis By Flint." In Vienna.

The types of *punctipennis* have been compared with the type of *parishi* and have been found to be identical in maculation and venation. The figure of the female was prepared from the lectotype of *punctipennis*, that of the male from the type of *parishi*.

***Triaenodes columbica* Ulmer**

Triaenodes columbica Ulmer, 1909c, pp. 141, 142; 1913, p. 410.—Tomaszewski, 1961, p. 5.—Fischer, 1966, p. 90.

This species is known only from the male holotype in the collection from Warsaw. Unfortunately the abdomen and right forewing are

missing. The original figures of the genitalia of the species appear to be quite good and probably are adequate for recognition of the species.

Calamoceratidae

Phylloicus major Müller

FIGURES 5*d–f*

Phylloicus major Müller, 1880, p. 131; 1881, p. 81; 1921, pp. 523–542.—Flint, 1964, p. 65.—Fischer, 1965, pp. 22, 23.
Homeoplectron assimile Ulmer, 1905a, pp. 36, 37.—Tomaszewski, 1961, p. 3.
Phylloicus assimilis (Ulmer).—Ulmer 1905b, pp. 77, 78; 1907b, p. 120; 1913, pp. 398, 409.—Lestage 1925, p. 43.

Lectotype, male: "S. Catarina Lüderwaldt," "Type," "St. Z. 1905: p. 37 N 21," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1723," "Phylloicus (Homeoplectron) assimilis Ulmer Typus!" "Lectotype Homeoplectron assimilis Ulmer By Flint." In Warsaw.

Ulmer (1905b) synonymized *major* and *assimilis*, retaining *assimilis* as the valid name because he felt that *major* was a nomen nudum. However, *major* had been validated as a name for the larval cases; thus, *assimilis* is the synonym.

In addition to the types of *assimilis*, I have studied material at the MCZ and from Vienna labelled *major* by Müller. The genitalia of the males of *major* and *assimilis* differ only in the possession of a small process above the cercus in *assimilis*. The coloration of *assimilis* is difficult to ascertain because the types are nearly denuded, but what remains of the pattern is reconcilable with the pattern of the specimens of *major*. Undoubtedly, Ulmer was correct in synonymizing the two.

The figures of the male genitalia were prepared from the lectotype of *assimilis*.

Phylloicus angustior Ulmer

Figures 5*a–c*

Phylloicus angustior Ulmer, 1905b, pp. 78, 79; 1907b, p. 120; 1913, pp. 399, 409.—Jorgensen 1919, p. 197.—Lestage 1925, p. 44.—Fischer, 1965, p. 21.

Lectotype, male: "Stieglmayr. Rio Gr. do Sul," "angustior det. Ulmer," "Lectotype Phylloicus angustior Ulmer By Flint." In Vienna.

The wings of this species are covered with fuscus hairs, with a few white ones scattered in the region of the anastamosis and again nearer the wing base. The genitalia of the lectotype are figured.

Sericostomatidae

Grumicha flavipes (Ulmer)

FIGURES 5*g,h*

Dicentropus flavipes Ulmer, 1905a, pp. 16, 17.—Tomaszewski 1961, p. 2.
Grumicha flavipes (Ulmer).—Ulmer, 1905b, p. 97; 1907b, p. 96; 1913, p. 404.—Jorgensen 1919, p. 399.

Lectotype, male: "S. Catarina Lüderwaldt," "Co-Typus," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1716," "Lectotype Dicentropus flavipes Ulmer By Flint." In Warsaw.

The figures of the genitalia were made from the lectotype.

Helicopsychidae

Tetanonema clarum Ulmer

FIGURES 5*i–k*

Tetanonema clarum Ulmer, 1905a, pp. 17, 18; 1907b, pp. 95, 96; 1913, p. 404.—Jorgensen, 1919, p. 398.—Tomaszewski, 1961, p. 5.

Lectotype, male: "S. Catarina Lüderwaldt," "Co-Typus," "Inst. Zool. P.A.N. Warszawa Syntypus Nr. 1762," "Lectotype Tetanonema clarum Ulmer By Flint." In Warsaw.

The lectotype lacks the left forewing and one antenna but is otherwise complete. The figures of the male genitalia were made from the lectotype.

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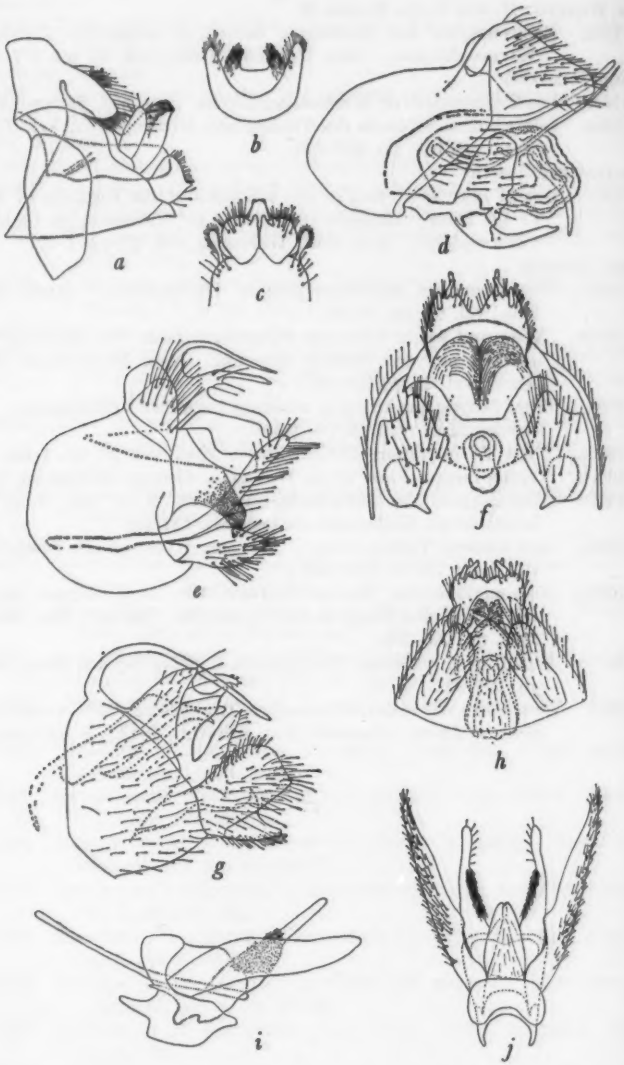

FIGURE 1.—*Chimarra brasiliana: a*, male genitalia, lateral; *b*, eighth tergum, dorsal; *c*, genitalia, ventral. *Mexitrichia albolineata: d*, male genitalia, lateral. *Polyplectropus flavicornis: e*, male genitalia, lateral; *f*, female genitalia, ventral. *P. annulicornis: g*, male genitalia, lateral; *h*, female genitalia, ventral. *Xiphocentron bilimeki: i*, male genitalia, lateral; *j*, male, dorsal.

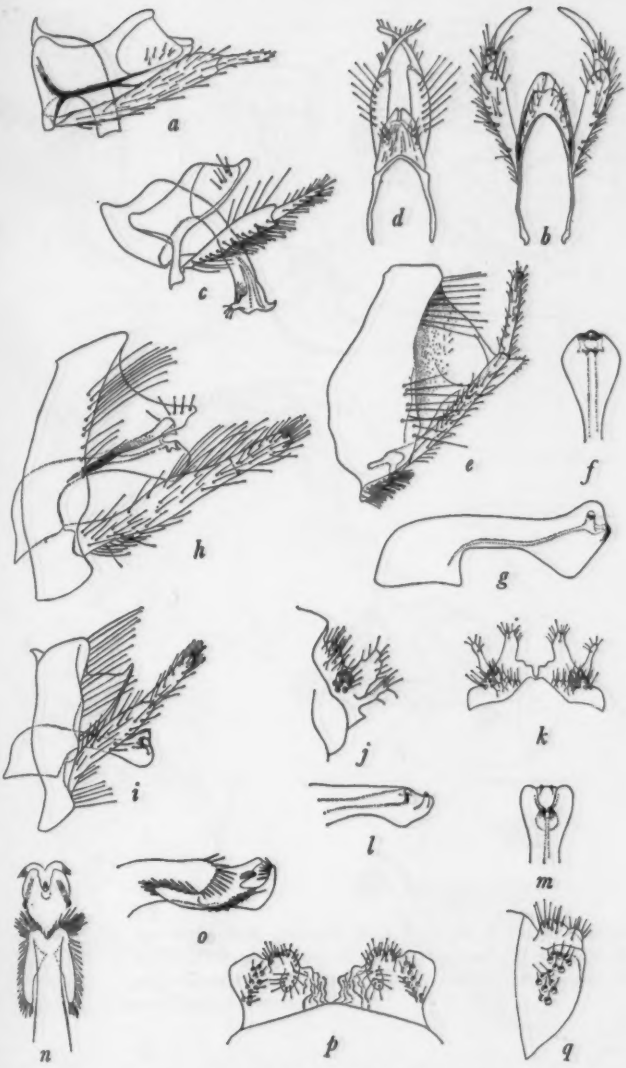

FIGURE 2.—*Rhyacophylax brasilianus: a*, male genitalia, lateral; *b*, male, dorsal. *R. columbianus: c*, male genitalia, lateral; *d*, male, dorsal. *Blepharopus diaphanus reticulatus: e*, male genitalia, lateral; *f*, tip of aedeagus, dorsal; *g*, aedeagus, lateral. *Synoestropsis obliqua: h*, male genitalia, lateral. *S. pedicillata: i*, male genitalia, lateral. *Leptonema cinctum: j*, male tenth tergum, lateral; *k*, male tenth tergum, dorsal; *l*, tip of aedeagus, lateral; *m*, tip of aedeagus, dorsal. *L. stigmosum: n*, tip of aedeagus, dorsal; *o*, tip of aedeagus, lateral; *p*, male tenth tergum, dorsal; *q*, male tenth tergum, lateral.

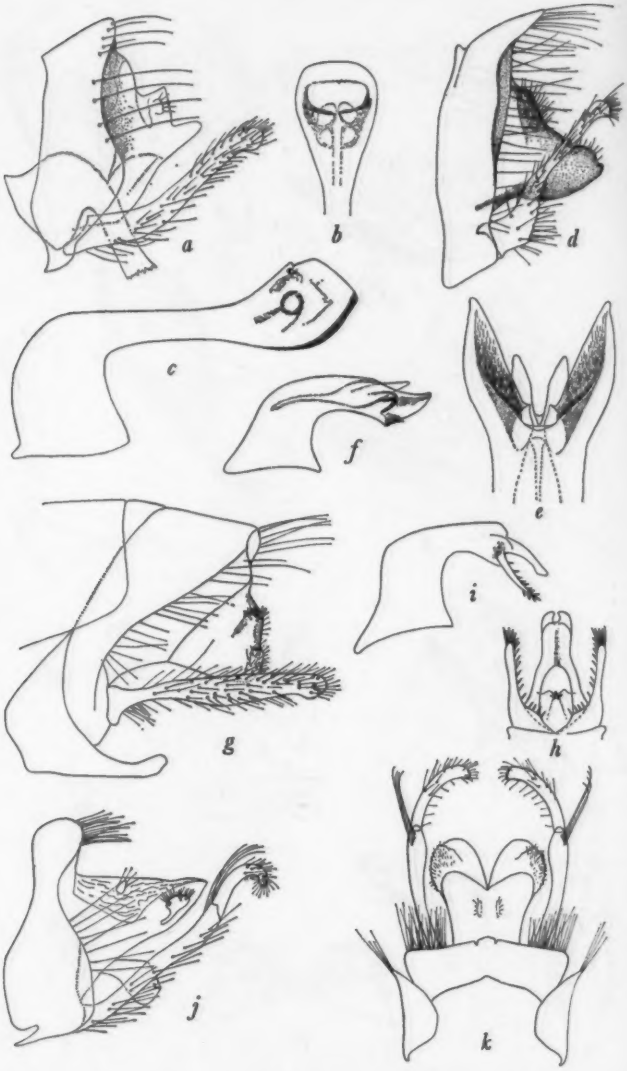

FIGURE 3.—*Macronema parvum: a*, male genitalia, lateral; *b*, tip of aedeagus, dorsal; *c*, aedeagus, lateral. *M. bicolor: d*, male genitalia, lateral; *e*, tip of aedeagus, ventral; *f*, aedeagus, lateral. *M. argentilineatum: g*, male genitalia, lateral; *h*, tip of aedeagus, ventral; *i*, aedeagus, lateral. *M. tuberosum: j*, male genitalia, lateral; *k*, male, dorsal.

FIGURE 4.—*Leptocella mulleri: a*, male genitalia, lateral; *b*, tip of clasper, ventral. *L. flavofasciata: c*, male genitalia, lateral; *d*, tip of clasper, ventral. *L. punctata: e*, male genitalia, lateral; *f*, tip of clasper, ventral; *g*, male, dorsal. *Oecetis punctipennis: h*, male genitalia, lateral; *i*, female genitalia, ventral.

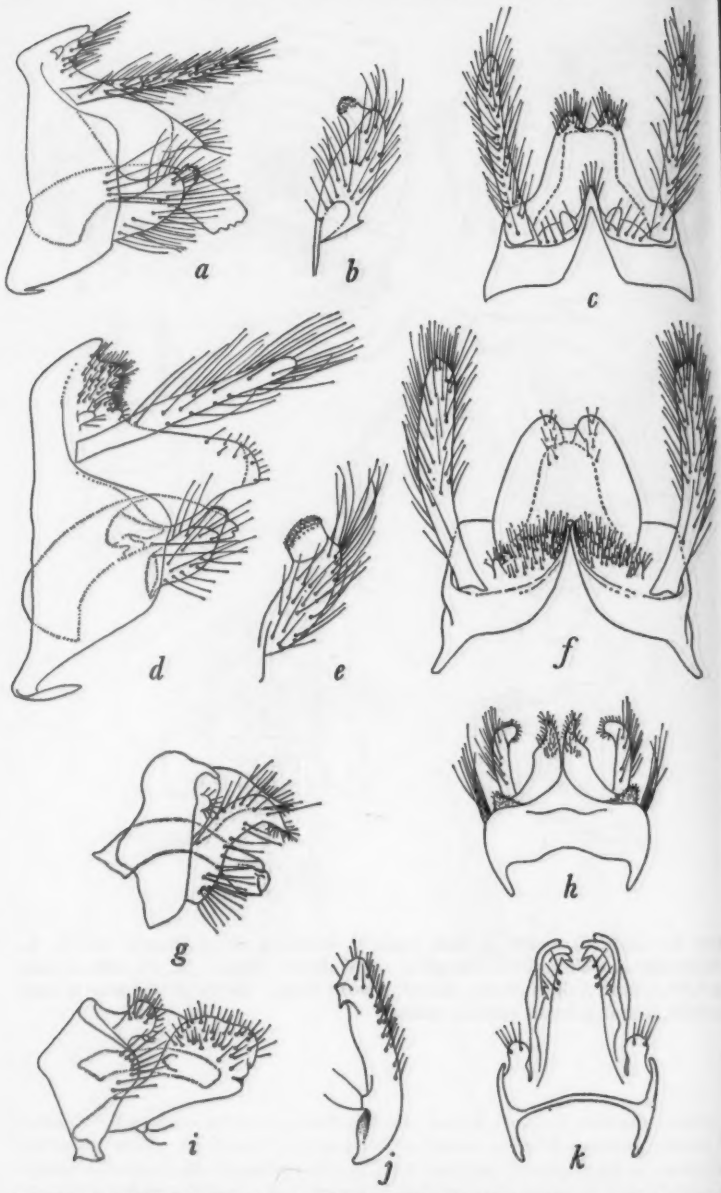

FIGURE 5.—*Phylloicus angustior: a*, male genitalia, lateral; *b*, clasper, ventral; *c*, male, dorsal. *P. major: d*, male genitalia, lateral; *e*, clasper, ventral; *f*, male, dorsal. *Grumichella flavipes: g*, male genitalia, lateral; *h*, male, dorsal. *Tetanonema clarum: i*, male genitalia, lateral; *j*, clasper, ventral; *k*, male, dorsal.

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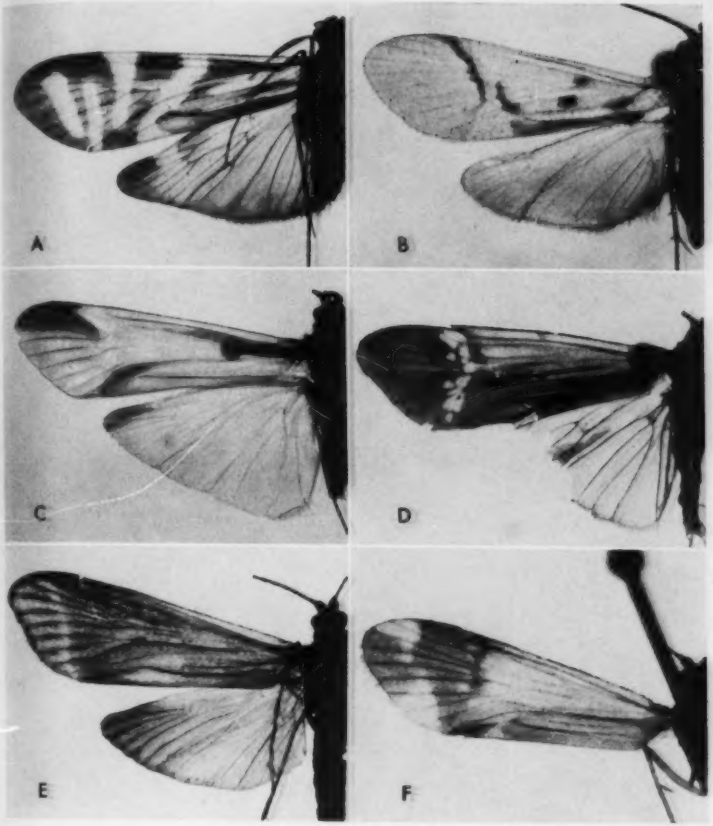
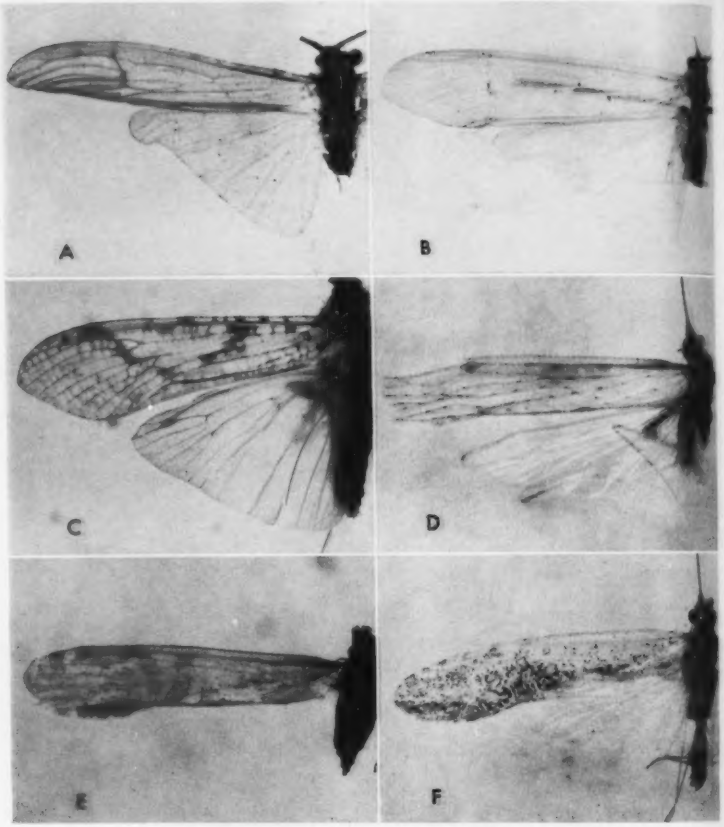


FIGURES A-F.—A, *Macronema tuberosum;* B, *M. santaeritae;* C, *M. bicolor;* D, *M. argentilineatum;* E, *Centromacronema excisum;* F, *M. parvum.*



FIGURES A-F.—A, *Synoestropsis obliqua*; B, *S. pedicillata*; C, *Blepharopus diaphanus reticulatus*; D, *Leptocella mulleri*; E, *L. flavofasciata*; F, *L. punctata*.

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